WHAT IS CLAIMED IS:

1. An infrared imaging apparatus for carrying out shading correction of picture data obtained as a result of an image-taking process using a camera head comprising an optical system, a plurality of detector elements and a container for accommodating said detector elements, said infrared imaging apparatus comprising:

a first correction unit for creating corrected-sensitivity picture data by correction of shading components caused by said optical system to produce uniform scene components included in said picture data obtained as a result of an image-taking process of a uniform scene;

a storage unit for storing a housing response profile for correcting a housing-shading component caused by infrared rays radiated by said optical system and said container for each of said detector elements; and

a second correction unit for creating corrected-housing-shading picture data by correction of housing-shading components based on said corrected-sensitivity picture data and said housing response profile for each of said detector elements.

2. An infrared imaging apparatus according to claim 1 wherein said second correction unit corrects a

housing-shading component by executing the steps of:

assuming that a product of a first constant and a housing response profile for each of said detector elements is a housing component for each of said detector elements;

finding said first constant; and

subtracting a product of a housing response profile for each of said detector elements and said first constant from corrected-sensitivity picture data for each of said detector elements.

3. An infrared imaging apparatus according to claim 1 wherein said second correction unit:

assumes that, for each of said detector elements, said corrected-sensitivity picture data of any particular one of said detector elements is a sum of a housing-shading component and a second constant representing a scene component where said housing-shading component is a product of a first constant and said housing response profile for said particular detector element; and

computes said first constant's value that minimizes a total obtained by summing the square of a difference said sum from said corrected-sensitivity picture data related to the detector elements.

4. An infrared imaging apparatus according to

claim 3 wherein said housing response profile is data with no physical dimensions.

5. An infrared imaging apparatus according to claim 4 wherein said second correction unit changes said first and second constants in accordance with an average value of pieces of corrected-sensitivity picture data for a plurality of said detector elements in a predetermined area.

6. An infrared imaging apparatus according to claim 1 wherein said housing response profile for any particular one of said detector elements is a product of a third constant and differential data between first picture data for said particular detector element and second picture data for said particular detector element where:

said first picture data is picture data taken by setting a black-body-radiator placed in front of said camera head at a predetermined temperature and setting said camera head at a first temperature; whereas

said second picture data is picture data taken by setting said black-body-radiator at said predetermined temperature and setting said camera head at a second temperature.

7. An infrared imaging apparatus according to

claim 1 wherein said first correction unit corrects shading components caused by said optical system in accordance with sensitivity-correction calibration data based on third picture data and fourth picture data where:

said third picture data is picture data taken by setting said camera head at a predetermined temperature and setting a black-body placed in front of said camera head at a third temperature; whereas

said fourth picture data is picture data taken by setting said camera head at said predetermined temperature and setting said black-body-radiator at a fourth temperature.

8. An infrared imaging apparatus according to claim 2, further comprising:

a scanning unit for putting a view axis of said camera head in a scanning movement; and

a smoothing-process unit for creating smoothed picture data by carrying out integration and averaging processes on pieces of corrected-sensitivity picture data for detector elements of an infrared detector,

wherein said second correction unit computes said first constant on the basis of said smoothed picture data.

9. An infrared imaging apparatus according to

claim 1, further comprising:

a smoothing-process unit for creating smoothed picture data by carrying out integration and averaging processes on pieces of corrected-sensitivity picture data for detector elements of an infrared detector; and

a third correction unit for correcting corrected-sensitivity picture data of any particular one of said detector elements on the basis of a difference between said smoothed picture data created by carrying out said integration and averaging processes on pieces of corrected-sensitivity picture data for detector elements surrounding said particular detector element and an average value of said smoothed data.

10. An infrared imaging apparatus according to claim 7 wherein said sensitivity-correction calibration data is a first average value and an offset-correction calibration data based on gain-correction calibration data representing a ratio of a second difference to a first difference and based on said third picture data for said detector elements where:

said first difference is a difference between said first average value of said third picture data of said detector elements and a second average value of said fourth picture data of said detector elements; whereas

said second difference is a difference between said third picture data of said detector elements and said fourth picture data of said detector elements.